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Cervélo P5 aerodynamic development

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Presented at the STAR Global Conference 2012

The presentation will be divided in the following sections:

1. Cervélo in the past

A brief history of how Cervélo performed the aerodynamic analysis of bikes, such as the P4. The primary tool was the wind tunnel, a time consuming development phase, yielding good quantitative solutions but no qualitative solutions.

A summary of development time and resources will also be included.

2. CFD Benchmarking

Prior to the development of the replacement of the P4 time trial bike it was necessary to make sure that STAR-CCM+ provides the correct results in both, absolute and relative terms. Successful correlation to the wind tunnel will be shown.

3. P5 Aerodynamic Development

The complete aerodynamic analysis of the P5 will be exposed. This section will be divided in two parts. In a conceptual stage "major brush strokes", where the general shape was chosen. The second part contains the "detailed analysis" where front-ends, brakes, aero bars etc. will be explained.

4. Future work

Old and new aero development techniques will be compared, showing that STAR-CCM+ has not only shortened the development time and reduced the costs but also helped yielding better and more exciting products.

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